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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,156

03/08/2007

Domenico Romiti

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06/10/2009

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EXAMINER

LEO, LEONARD R

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

06/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,156	Applicant(s) ROMITI, DOMENICO	
	Examiner Leonard R. Leo	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 20, 2009 has been entered.

Claims 1-6 and 8-12 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gandolfi et al in view of Nagano, and further in view of Applicant's Admission.

Gandolfi et al (page 18, first paragraph) discloses the tubes are composed of titanium, but does not disclose a hot-drawn or welded layer of zirconium.

Nagano discloses a protective coating for titanium comprising zirconium for the purpose of preventing corrosion.

Applicant's Admission (page 13, full paragraph) discloses it is well known in the art how to hot-draw or weld zirconium to titanium for the purpose of providing a strong bond.

Since Gandolfi et al and Nagano are both from the same field of endeavor and/or analogous art, the purpose disclosed by Nagano would have been recognized in the pertinent art of Gandolfi et al.

Since Gandolfi et al and Applicant's Admission are both from the same field of endeavor and/or analogous art, the purpose disclosed by Applicant's Admission would have been recognized in the pertinent art of Gandolfi et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Gandolfi et al a zirconium coating on the titanium tubes for the purpose of preventing corrosion as recognized by Nagano, and hot-draw or weld the zirconium to titanium for the purpose of providing a strong bond as admitted by Applicant.

Regarding claim 2, it would have been obvious to one of ordinary skill in the art to employ the zirconium coating on either the inside or outside of the titanium tube depending on which surface requires corrosion protection with respect to the intended working fluids.

Regarding claim 3, the specific titanium tube and zirconium coating thicknesses are considered to be an obvious design choice, producing no new and/or unexpected results. One of ordinary skill in the art would employ any desired tube and coating thicknesses to achieve a desired heat exchange, pressure resistance, wear ability, etc.

Regarding claims 4-6, Gandolfi et al (page 8, lines 4-22) discloses a portion of the tubes may be corrosion protected where the working or process fluid is at its maximum aggressiveness. One of ordinary skill in the art would employ any portion of the tube with the protective layer to achieve a desired amount of corrosion resistance.

Regarding claims 9-10, Gandolfi et al (Figure 3, page 24, lines 2-6) discloses a carbon or stainless steel tube plate 22 with a titanium layer 23. The specific titanium layer thickness is considered to be an obvious design choice, producing no new and/or unexpected results. One of ordinary skill in the art would employ any desired layer thickness to achieve a desired corrosion resistance, wear ability, etc.

Regarding claims 11-12, the recitations of “for the decomposition of ammonium carbamate in an urea production plant” and “for the condensation of ammonia and carbon dioxide into ammonium carbamate in an urea production plant” are considered to be a statements of intended use, even if claimed, does not merit patentable weight unless the body of the claim refers back to, is defined by, or otherwise draws life and breadth from such intended use. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Initially, it is noted the combination of Gandolfi et al and Nagano meets the structural limitations of the claim, namely a titanium tube bundle having an interior zirconium bonded layer. However, applicant argues the presence of the product-by-process limitation “bonded ... metallurgically or through welding” is a structural limitation due to its structural difference to the zirconium layer as taught by Nagano. In this respect, applicant's admission (page 13, full paragraph) discloses well known hot-drawing and welding techniques are employed to bond titanium and zirconium to provide a strong joint. The novelty of the instant invention is the combination of titanium and zirconium, and not the specific bonding between the titanium and

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zirconium. Arguendo, the combination of Gandolfi et al, Nagano and Applicant's Admission fairly teaches to one of ordinary skill in the art a titanium tube bundle having an interior hot-drawn or welded titanium layer.

No further comments are deemed necessary at this time.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ LEONARD R LEO /
PRIMARY EXAMINER
ART UNIT 3744

June 10, 2009